WHAT IS CLAIMED IS:

1. An electrochemical cell, which comprises:

a) a negative electrode;

b) a positive electrode comprising an electrode active material; and

c) an electrolyte activating the negative and the positive electrodes, wherein at least one of the negative electrode and the positive electrode comprises at least a first binder consisting of a halogenated polymeric material and a second binder consisting of a polyimide and wherein the polyimide is not soluble in the electrolyte.

2. The electrochemical cell of claim 1 as either a primary or a secondary cell.

3. The electrochemical cell of claim 1 wherein the halogen is fluorine.

4. The electrochemical cell of claim 1 wherein the first binder is selected from the group consisting of polytetrafluoroethylene, modified polytetrafluoroethylene, polyhexafluoropropylene, tetrafluoroethylene-hexafluoropropylene copolymers, tetrafluoroethylene-perfluoroalkyl vinyl ether copolymers, polytrifluoroethylene, ethylene-tetrafluoroethylene copolymers, fluoroethylene-hydrocarbon vinyl ether copolymers, polychlorotrifluoroethylene, ethylene-chlorotrifluoroethylene copolymers, polyvinyl fluoride, polyvinylidene fluoride, vinylidene fluoride-hexafluoropropylene copolymers, fluorinated

(meth)acrylate resins, 2-fluoroacrylate resins, fluorinated epoxy resins, fluorinated epoxy (meth)acrylate resins, fluorinated polyether resins, fluorinated polyimide resins, fluorinated polyester resins, fluorinated polyamide resins, fluorinated polycarbonate resins, fluorinated polyformal resins, fluorinated polyketone resins, fluorinated polyazomethine resins, fluorinated polyazole resins, fluorinated polyallyloxysilane resins, vinylidene fluoride-hexafluoropropylene fluoroelastomer, vinylidene fluoride-tetrafluoroethylene fluoroelastomer, tetrafluoroethylene-perfluoroalkyl vinyl ether fluoroelastomer, vinylidene fluoride-tetrafluoroethylenehexafluoropropylene fluoroelastomer, vinylidene fluoride-tetrafluoroethylene-perfluoroalkyl vinyl ether fluoroelastomer, tetrafluoroethylene-perfluoroalkyl vinyl ether fluoroelastomer, propylene-tetrafluoroethylene fluoroelastomer, fluorosilicone rubber, fluorinated phosphazene rubber, fluorinated thermoplastic rubbers and flexible fluorocarbon resins, and mixtures thereof.

5. The electrochemical cell of claim 1 wherein the ratio of the first binder to the second binder is, by weight, about 1:99 to about 99:1.

6. The electrochemical cell of claim 1 wherein the ratio of the first binder to the second binder is, by weight, about 40:60 to about 60:40

7. The electrochemical cell of claim 1 wherein the first binder is polyvinylidene fluoride and the second

binder is polyimide as a product of the conversion of polyamic acid.

8. The electrochemical cell of claim 1 wherein the cell is a lithium ion cell having the positive electrode comprised of lithiated cathode material and wherein the negative electrode is comprised of a carbonaceous material and the ratio of the first binder to the second binder in the negative electrodes is, by weight, about 3:1.

9. The electrochemical cell of claim 1 wherein the at least one of the negative electrode and the positive electrode is characterized as having been heat cured prior to being activated by the electrolyte.

10. The electrochemical cell of claim 1 wherein the at least one of the negative electrode and the positive electrode having the first binder and the second binder is characterized as having been cured at a temperature of about 225°C to about 275°C for about 30 minutes to about 2 hours prior to being contacted by the electrolyte.

11. An electrode for an electrochemical cell, the electrode comprising:

a) an electrode active material;

b) a first binder consisting of a halogenated polymeric material; and

c) a second binder consisting of a polyimide derived from the heat conversion of polyamic acid.

12. The electrode of claim 11 wherein the halogen is fluorine.

13. The electrode of claim 11 wherein the first binder is selected from the groups consisting of polytetrafluoroethylene, modified polytetrafluoroethylene, polyhexafluoropropylene, tetrafluoroethylene-hexafluoropropylene copolymers, tetrafluoroethylene-perfluoroalkyl vinyl ether copolymers, polytrifluoroethylene, ethylene-tetrafluoroethylene copolymers, fluoroethylene-hydrocarbon vinyl ether copolymers, polychlorotrifluoroethylene, ethylene-chlorotrifluoroethylene copolymers, polyvinyl fluoride, polyvinylidene fluoride, vinylidene fluoride-hexafluoropropylene copolymers, fluorinated (meth)acrylate resins, 2-fluoroacrylate resins, fluorinated epoxy resins, fluorinated epoxy (meth)acrylate resins, fluorinated polyether resins, fluorinated polyimide resins, fluorinated polyester resins, fluorinated polyamide resins, fluorinated polycarbonate resins, fluorinated polyformal resins, fluorinated polyketone resins, fluorinated polyazomethine resins, fluorinated polyazole resins, fluorinated polyallyloxysilane resins, vinylidene fluoride-hexafluoropropylene fluoroelastomer, vinylidene fluoride-tetrafluoroethylene fluoroelastomer, tetrafluoroethylene-perfluoroalkyl vinyl ether fluoroelastomer, vinylidene fluoride-tetrafluoroethylenehexafluoropropylene fluoroelastomer, vinylidene fluoride-tetrafluoroethylene-perfluoroalkyl vinyl ether fluoroelastomer, tetrafluoroethylene-

perfluoroalkyl vinyl ether fluoroelastomer, propylene-tetrafluoroethylene fluoroelastomer, fluorosilicone rubber, fluorinated phosphazene rubber, fluorinated thermoplastic rubbers and flexible fluorocarbon resins, and mixtures thereof.

14. The electrode of claim 11 wherein the ratio of the first binder to the second binder is, by weight, about 1:99 to 99:1.

15. The electrode of claim 11 wherein the ratio of the first binder to the second binder is, by weight, about 40:60 to about 60:40.

16. The electrode of claim 11 wherein the first binder is polyvinylidene fluoride and the second binder is polyimide as a conversion product of polyamic acid.

17. The electrode of claim 16 wherein the ratio of the first binder to the second binder is, by weight, about 50:50.

18. The electrode of claim 11 characterized as having been cured at a temperature of about 225°C to about 275°C for about 30 minutes to about 2 hours.

19. A method for providing an electrode for an electrochemical cell, comprising the steps of:

a) providing an electrode active material;

b) combining the electrode active material with a binder mixture comprising at least a first binder consisting of a halogenated polymeric material and a second binder consisting of a polyimide derived from the

heat conversion of polyamic acid to form an electrode active admixture;

c) contacting the electrode active admixture to a conductive substrate to form an electrode structure; and

d) heating the electrode structure to convert the polyamic acid to the polyimide.

20. The method of claim 19 wherein the halogen is fluorine.

21. The method of claim 19 including providing the first binder in a powdered form and the second binder as a slurry.

22. The method of claim 19 including combining the electrode active material and the binder mixture in a solvent.

23. The method of claim 22 including selecting the solvent from the group consisting of water, methyl ethyl ketone, cyclohexanone, isophoron, N-methylpyrrolidone, N,N-dimethylformamide, N,N-dimethylacetamide, toluene, and mixtures thereof.

24. The method of claim 19 wherein the electrode is a cathode in an alkali metal electrochemical cell or a cathode current collector is a cell containing a liquid depolarizer/catholyte.

25. The method of claim 19 wherein the electrode is either a negative or a positive electrode in a secondary electrochemical cell.

26. The method of claim 19 wherein the first binder is polyvinylidene fluoride and the second binder is polyimide as a product of the conversion of polyamic acid.

27. The method of claim 19 wherein the ratio of the first binder to the second binder is, by weight, about 1:99 to about 99:1.

28. The method of claim 19 wherein the ratio of the first binder to the second binder is, by weight, about 40:60 to about 60:40.

29. The method of claim 19 wherein the electrode is intended for incorporation into a lithium ion cell as a positive electrode devoid of lithium material or as a negative electrode comprised of a carbonaceous material and wherein the ratio of the first binder to the second binder in both the positive and the negative electrodes is, by weight, about 3:1.

30. The method of claim 19 including heating the electrode at a temperature of about 225°C to about 275°C for a period of about 30 minutes to about 2 hours prior to incorporation of it into an electrochemical cell.